Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

1-7. (Cancelled).

8. (Presently Amended) A ~~mutagenesis method of a gene~~method of mutating a gene of a vertebrate animal, comprising the steps of:

a) treating a ~~germ cell~~sperm of the vertebrate animal with a psoralen derivative;

b) irradiating the ~~germ cell~~sperm with ~~a high energy beam~~UV light; and

c) subjecting the irradiated ~~germ cell~~sperm to artificial fertilization ~~to induce mutagenesis in an embryo~~.

9. (Cancelled).

10. (Presently Amended) The method of claim 8 ~~or 9~~ wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

11. (Presently Amended) The method ~~of claim 8 or 9~~according to claim 10, wherein ~~the psoralen derivative is 4,5',8-trimethylpsoralen and~~ the vertebrate animal is zebrafish.

12. (Presently Amended) The method ~~of claim 8 or 9~~according to claim 8, wherein the ~~mutagenesis~~ mutation is introduced into a region containing a pyrimidine base.

13. (Presently Amended) A method for preparation of a mutated gene of a vertebrate animal, comprising the steps of:

a) treating a ~~germ cell~~sperm of the vertebrate animal with a psoralen derivative;

b) irradiating the treated ~~germ cell~~sperm with ~~a high energy beam~~UV light; and

c) subjecting the irradiated ~~germ cell~~sperm to artificial fertilization ~~to induce mutagenesis in an embryo~~.

14. (Cancelled).

15. (Presently Amended) The method ~~of claim 13 or 14~~according to claim 13, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

16. (Presently Amended) The method ~~of claim 13 or 14~~according to claim 15, wherein ~~the psoralen derivative is 4,5',8-trimethylpsoralen and~~ the vertebrate animal is zebrafish.

17. (Presently Amended) The method ~~of claim 13 or 14~~according to claim 13, wherein the ~~mutagenesis~~ mutation is introduced into a region containing a pyrimidine base.

18. (Presently Amended) A method for analyzing ~~the~~ a function of a gene of a vertebrate animal, comprising the steps of:

a) treating a ~~germ cell~~sperm of the vertebrate animal with a psoralen derivative;

b) irradiating the treated germ cell with ~~a high energy beam~~UV light;

c) subjecting the irradiated ~~germ cell~~sperm to artificial fertilization ~~to induce mutagenesis in an embryo~~;

d) ~~expressing a mutated gene; and~~ comparing phenotype of a mutant having the mutated gene with that of a wild type to find the difference of phenotype between the mutant and the wild type;

e) ~~examining the correlation between the mutated gene and the mutant phenotype~~determining the mutated gene; and

f) analyzing functions of a gene of the vertebrate animal corresponding to the mutated gene from the said differences of phenotype.

19. (Cancelled).

20. (Presently Amended) The method ~~of claim 18 or 19~~according to claim 18, wherein the psoralen derivative is 4,5',8-trimethylpsoralen.

21. (Presently Amended) The method ~~of claim 18 or 19~~according to claim 20, wherein ~~the psoralen derivative is 4,5',8-trimethylpsoralen and~~ the vertebrate animal is zebrafish.

22. ~~(Presently Amended) The method of claim 18 or 19 wherein the mutagenesis~~mutation is introduced into a region containing a pyrimidine base.